

WHAT IS CLAIMED IS:

1. A reciprocating piston-type machine, in particular a compressor, preferably for the air conditioning system of a motor vehicle, having a housing and at least one housing cover, the power unit encompassing the pistons 3 being accommodated or formed in the housing, and the suction and discharge areas or a forward shaft bearing being accommodated or formed in the at least one housing cover, and the housing cover being screw-coupled to the housing, the screw connection being designed in the form of a ring nut or of a thread that functions between the housing and the housing cover,
wherein the thread is a sawtooth thread.
2. The reciprocating piston-type machine as recited in claim 1,
wherein the peripheral or equivalent stresses caused by the thread in the housing wall (and also in the cover and, respectively, the threaded ring) in the radial direction in response to axial compressive load on the cover, are substantially reduced by the sawtooth thread in comparison to a triangular thread or similar threads.
3. The reciprocating piston-type machine as recited in claim 1 or 2,
wherein the thread engagement torque is substantially reduced by the sawtooth thread in comparison to a triangular thread or similar threads.
4. The reciprocating piston-type machine as recited in one of the preceding claims,
wherein, as compared to a triangular thread or similar threads, the thermal stresses are substantially reduced, i.e., , the prestressing is maintained by the sawtooth thread.
5. The reciprocating piston-type machine as recited in one of the preceding claims,
wherein, in comparison to a triangular thread or similar threads, the sawtooth thread ensures a reduction in the loading on the housing and in the thread engagement torque, given the same outlay for manufacturing.
6. The reciprocating piston-type machine as recited in one of the preceding claims,
wherein smaller-wall thicknesses in the housing and shorter thread lengths are made possible by the sawtooth thread, as compared to a triangular thread or similar threads.

7. The reciprocating piston-type machine as recited in one of the preceding claims, wherein reductions in weight are achieved by the sawtooth thread as compared to a triangular thread or similar threads.
8. The reciprocating piston-type machine as recited in one of the preceding claims, wherein the sawtooth form of the structural component having a substantially lower material strength (cylinder head of aluminum, for example) is substantially wider/larger than the sawtooth form of the structural component having a substantially higher material strength (for example, housing of steel, etc.).
9. The reciprocating piston-type machine as recited in claim 8, wherein the thread has a substantially reduced length as compared to a standard sawtooth thread.
10. The reciprocating piston-type machine as recited in claim 8 or 9, wherein the thread has a substantially steeper pitch than does a standard sawtooth thread.
11. The reciprocating piston-type machine as recited in claims 8 through 10, wherein the thread renders possible substantially less precise manufacturing tolerances than does a standard sawtooth thread.
12. The reciprocating piston-type machine as recited in claims 8 through 11, wherein the wide sawtooth is so wide that it is also usable as a surface for clamping during further machining of the particular component.
13. The reciprocating piston-type machine as recited in one of the preceding claims, wherein the flank angle of the sawtooth thread is $< 0^\circ$ instead of the standard 3° according to DIN 515, when the component(s) having the external thread („bolt“) are made of a material having a greater thermal expansion coefficient (for example aluminum) than the component(s) having an internal thread („nut“, for example steel).
14. The reciprocating piston-type machine as recited in one of the preceding claims,

wherein the flank angle of the sawtooth thread is $> 0^\circ$ when the component(s) having the external thread are made of a material having a smaller thermal expansion coefficient than the component(s) having an internal thread.